

### **REMARKS/ARGUMENTS**

As filed, the application included claims 1-31. This amendment amends claims 21, 22 and 28. No claims have been canceled, but new claims 32-37 have been added. Hence, after entry of this amendment, claims 1-37 stand pending for examination.

#### **Drawing Objections**

Figs. 2-4 were objected to because they fail to show necessary textual labels of features or symbols as described in the specification. New Figs. 2-4 have been attached in the Appendix to remedy these deficiencies. Figs. 2-4 have been corrected to provide textual legends (conforming with the respective descriptions in the specification) for each of the features in the drawings. It is respectfully submitted that the amended drawings overcome the objection to the drawings, and the applicants respectfully request the withdrawal of the objections to the drawings.

#### **Claim Amendments**

Claims 21, 22 and 28 have been amended to correct typographical errors. New claims 32-37 have been added. New claims 32-34 recite "storing the final set of units to a unit dictionary." (¶¶ 0035, 0038, 0043, 0044) New claim 35, which is representative of new claims 36-37, recites detecting (a) how often each of the plurality of the units appears by itself separate others of the plurality of units; detecting (b) how often two or more of the plurality of units appear next to each other across an entire set of queries; and comparing a result of (a) with a result of (b)." (¶ 0037)

#### **Specification**

The specification was amended to include the application number for a related application filed the same day as the subject application, as requested by the office action.

### **§ 103 Rejections**

Claims 1, 6-19 and 28-31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent No. 6,363,373 to Steinkraus ("Steinkraus") in view of US Patent No. 6,539,348 to Bond et al. ("Bond"). Claims 2-5 and 20-27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Steinkraus in view of Bond and further in view of US Patent No. 6,772,150 to Whitman et al. ("Whitman"). The applicants respectfully traverse the rejections, for at least the reasons stated below, and respectfully request withdrawal of the rejections.

Take, for example, claim 1, which recites "repeating the steps of combining and validating one or more times using the second set of units in place of the initial set of units until a convergence condition is satisfied, wherein a final set of units is formed once the convergence condition has been satisfied." The specification (§ 0038) provides an example of convergence: "the point beyond which the change in units generated/deleted is smaller than some pre-defined threshold value." None of the cited references teach or suggest this limitation. The office action asserts that Steinkraus (c. 8, l.10) teaches a convergence condition. The cited portion of Steinkraus, however, merely states that "concept tokens with normalized weights less than a threshold value may be truncated to prevent searching for a weak concept." Notwithstanding Bond's bare mention of a "threshold value," nothing in the cited passage teaches the quoted element of claim 1. Steinkraus's "threshold value" merely teaches truncating tokens with a low normalized weight (*i.e.*, tokens that are referenced relatively less frequently in a particular query, *see* Steinkraus, c. 8, ll. 4-6) to optimize a particular query.

In contrast, the quoted element of claim 1 recites that the steps of combining and validating are repeated until a convergence condition is satisfied. Steinkraus (as the office action correctly concedes) teaches nothing about repeating the steps of combining and validating a set of units, so there is no way that Steinkraus' "threshold value" for normalized weights could possibly serve as a convergence condition for such an iterative process. Instead, Steinkraus (c. 8, ll. 7-14) teaches that the truncation of low-normalized-weight tokens takes place at the very end of the tokenization process, right before the optimized query is submitted to the search engine. Hence, Steinkraus' "threshold value" is not a convergence condition but instead is used merely

to remove relatively irrelevant tokens from a query before searching that query. Simply put, Steinkraus cannot be used in the manner anticipated by the office action to teach the elements of claim 1.

Nor does Bond remedy Steinkraus' shortcomings. For one thing, the office action implicitly concedes that Bond fails to teach the convergence condition discussed above. Moreover, Bond does not even teach or suggest the even assuming (as the office action asserts) that Bond teaches "combining units from the initial set of units that appear adjacent each other in a query to form a second set of units," as recited in claim 1 (a proposition the applicants do not concede), the office action certainly fails to show how Bond possibly could be read to teach or suggest "validating the second set of units," as recited in claim 1. The office action posits that Bond's (c. 5, ll. 36-37) disclosure that "the process uses the second set of rules until no further narrowing of the possible syntactic interpretations is possible" somehow teaches or suggests "validating the second set of units." The applicants fail to understand how this disclosure in any way suggests validating a second set of units. Even assuming, *arguendo*, that Bonds' second set of rules produces a second set of units, merely using that second set of rules repeatedly cannot be said to validate the second set of units. It is axiomatic that one cannot validate the result of a process merely by repeating the process—any systematic errors produced by the process necessarily would be replicated when repeating the process.

The specification (§ 0037) of this application, by contrast, provides an example of a validation process:

"the consolidated query file is again scanned and this time the possible units . . . are analyzed to determine which are actually units (e.g., based on mutual information and other metrics). For example, determination of which possible units should be units is based, in one aspect, on detecting how often the constituent units appear by themselves separate from each other and comparing this number to how often they appear next to each other across an entire set of queries."

While this is but one example of validating a set of units (and other embodiments use other validation processes), this example illustrates how the cited portion of Bond fails to teach validating a second set of units.

More broadly, it is difficult to see how Steinkraus could be used to form a usable system that would read on claim 1, and for this additional reason, applicants respectfully submit, Steinkraus cannot be combined with any other reference to form a §103(a) rejection of claim 1. Claim 1 recites “receiving a plurality of queries, each query comprising a string of one or more words” and “wherein said tokens for said queries from an initial set of units.” Steinkraus, on the other hand, is directed to forming concept units from one specific query (see Fig. 3 of Steinkraus). As Fig. 3 indicates, Steinkraus clearly contemplates the processing of a single query at a time. (Indeed, as Steinkraus fails even to teach the storage of queries, it is difficult to see how Steinkraus could provide a plurality of queries to be processed.) Moreover, there would appear to be no motivation or suggestion to modify Steinkraus to process a plurality of queries at a time.

In fact, attempting to modify Steinkraus to process a plurality of queries would render Steinkraus unsuitable for its intended purpose: providing a concept search based on a user’s Boolean or keyword search. As noted above, to read on claim 1, Steinkraus would have to process a plurality of queries at one time, and tokens from such other queries necessarily would have to be included with tokens from the user’s query. In this case, the tokens from the other queries almost certainly would “dilute” the relative value of the tokens from the user’s query, leading to a concept search for concepts unrelated to the user’s Boolean or keyword search. Hence, modification of Steinkraus in the asserted manner would render Steinkraus unsuitable for its intended purpose, and Steinkraus therefore cannot be used to form a rejection of claim 1 under § 103(a).

Applicants therefore respectfully submit that claim 1 is allowable over the cited references, taken in any combination, and that the cited references cannot be combined to read on claim 1 in any case. For at least similar reasons, independent claims 21 and 28 likewise are allowable over the cited references. Moreover, dependent claims 2-20, 22-27 and 39-37 are

allowable as depending from allowable base claims as well as being directed to specific novel substitutes.

Merely by way of example, claim 31 recites "storing the final set of units to a unit dictionary," which none of the cited references either teach or suggest. As another example, claim 35 recites "detecting (a) how often each of the plurality of the units appears by itself separate others of the plurality of units; detecting (b) how often two or more of the plurality of units appear next to each other across an entire set of queries; and comparing a result of (a) with a result of (b)." Again, none of the cited references teach or suggest this limitation. For these and other, additional, reasons, all pending claims are allowable over the cited references, and the applicants respectfully request the withdrawal of the rejections under § 103(a)


**CONCLUSION**

In view of the foregoing, the applicants believe all claims now pending in this application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,

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PATENT

**Amendments to the Drawings:**

The attached sheets of drawings includes changes to Figs. 2-4. These sheets, which include Figs. 2-4, replace the original sheets including Figs. 2-4.

Attachment: Replacement Sheets (2)  
Annotated Sheets Showing Changes (2)

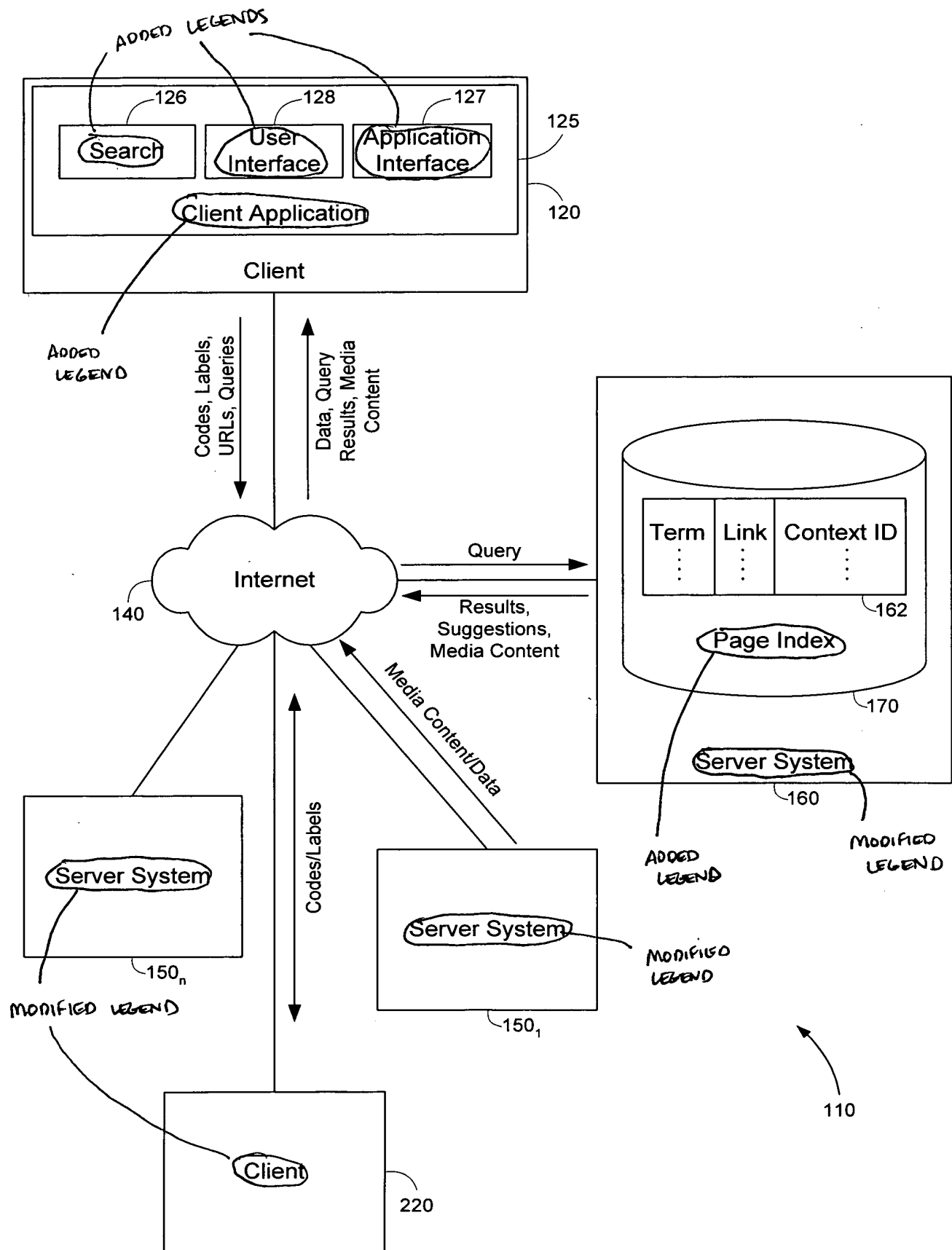


Fig. 2

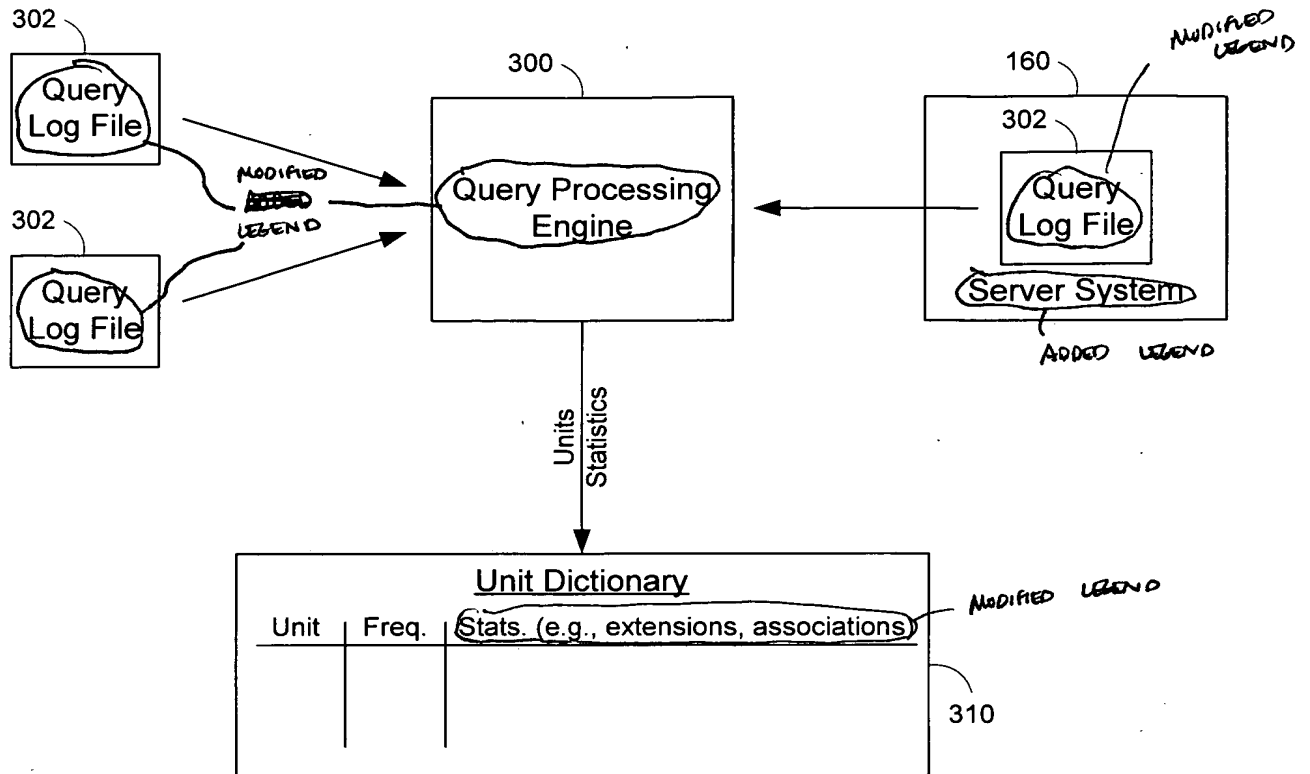


Fig. 3

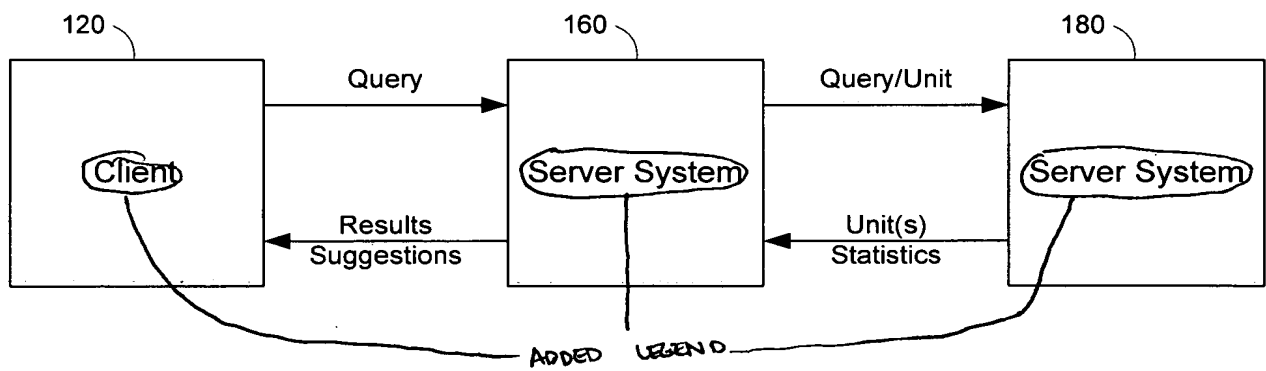


Fig. 4